

VALUE ENGINEERING CHANGE PROPOSAL  
MISSOURI DEPARTMENT OF TRANSPORTATION

Contract ID <u>100122-202</u>		Date <u>03/19/10</u>
County <u>Randolph</u>	Route <u>24</u>	Job No. <u>J2P0779C/J2P0779D</u>
Contractor <u>APAC-Missouri, Inc.</u>		Original Bid Cost <u>2,012,213.80</u>
Designed By <u>MoDOT</u>		By <u>Casey Castrop</u>
VECP # <u>10-31</u>		Phone <u>573-449-0886</u>
		VECP <input checked="" type="checkbox"/> or VECP/PDU <input type="checkbox"/>

1. Description of existing requirements and proposed change(s). Advantages/Disadvantages

Plans call for widening from STA 14+65 to STA 73+00; operations are to include removal of existing sub grade and replaced with 4" Type 1 Base rock and 11.25" of SP250. Due to operations associated with this type of work it will inconvenience the 3 businesses associated within these entrances.

After coring these concrete entrances with results showing 8" of thickness, APAC proposes to use in place the concrete drives. Thus saving MoDOT \$6,892.42 and expediting the project and lessening the impact on the businesses and traveling public. Please see the attached cost factor sheet.

2. Estimate of reduction in construction costs. \$6,892.42

3. Prediction of any effects the proposed change(s) will have on other department costs, such as maintenance and operations.

None anticipated

4. Anticipated date for submittal of detailed change(s) of items required by Section 104.6 of the Specifications.

\_\_\_\_\_  
(date)

5. Deadline for issuing a change order to obtain maximum cost reduction, noting the effect of contract completion time or delivery schedule.

April 5, 2010

(date)

\_\_\_\_\_  
(effect)

6. Dates of any previous or concurrent submission of the same proposal.

Additional Comments:

**\*\* Portion Below This Line To Be Filled Out by MoDOT \*\***

**Comments:**

Please see the attached analysis performed by Shane Viers, Assistant to the Resident Engineer. I concur that this proposal should be rejected based on the factors mentioned in the analysis.


  
Submitted By Resident Engineer

4-5-10  
Date

**Comments:**

I concur with the Resident Engineer's recommendation. This idea was discussed at length in the core team process and rejected due to the risk of pavement failure based on our previous experience with a similar situation.

☐ Approval  
Recommended

  
District Engineer

OMB

4/7/10  
Date

☒ Rejection  
Recommended

**Comments:**

☐ Approval  
Recommended

☐ Rejection  
Recommended

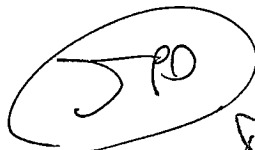
Federal Highway Administration  
Required for FHWA Full Oversight Projects

Date

**Comments:**

☐ Approval

☒ Rejection



  
State Construction and Materials Engineer

4/9/10

Date

**Rt. 24 Randolph**  
**J2P0779C/J2P0779D**  
**ID# 100122-202**

**VE #1 - Leaving Concrete Driveways In Place @ STA 21+10 LT @ LM 81.190 WB and @ STA 66+50 RT.**

STA 21+10	95'
LM 81.190	50'
STA 66+ 50	158'
<b>TOTAL</b>	<b>303'</b>

Item	350	303' X 8' = 269.33 SY
Item	360	303' X 2' X 5.5" = 21.48 Tons @ \$20.12/TN
Item	390	303' X 2' X 4" = 14.54 Tons @ \$58.33/TN
Item	440	303' X 6' = 202 SY

Savings	\$499.92
Savings	\$432.18
Savings	\$848.12
Savings	\$5,112.20

**Total Savings \$6,892.42**

**Total Savings MODOT \$3,446.21**

**Total Savings APAC \$3,446.21**

J2P0779D/J2P0779C  
100122-202  
RTE 24  
Randolph County

**Project Office analysis of Value Engineering proposal #1.**

Line No. 0360 Misc. Type 1 Base and Line No. 0390 Bituminous Base do not apply to the entrances in question. These were set up in the plans to be replaced with full depth widening to prevent the 2' thin spot in the entrances.

Line No. 0350 Type 1 Base (4") was calculated incorrectly. The actual savings for this line number should be \$1454.40.

Line No. 0440 Optional Widening should have been calculated at 8' wide rather than 6'. The actual savings for this line number should be \$9534.40.

Line No.	Description	Measurements	Unit Price	Savings
0350	Type 1 Base (4")	303'x8'=269.33SY	\$5.40/SY	\$1454.40
0440	Optional Widening	303'x8'=269.33SY	\$35.40/SY	<u>\$9534.28</u>
			<b>Total Savings</b>	<b>\$10,988.80</b>
			MoDOT	\$5494.40
			APAC	\$5494.40

Although the contractor's proposal does appear to produce a savings to the contract, it is my recommendation that this VE proposal be rejected based on the past performance of an identical situation on J2P0748, RTE 63, Macon County. At this location, the decision was made to leave the concrete entrance in place for the Comfort Inn at the north end of Macon. The entrance was cored in several locations to determine the thickness and strength of the existing concrete. Thickness was determined to be greater than 7.5" and strength was in excess of 6500 psi. The entrance was left in place and overlaid with 1.75" of SP125.

After completion of the project, the condition of the area allowed to remain in place rapidly deteriorated. Not until complete failure of the area did we discover that the thickness of the concrete varied wildly, and the durability of the concrete was suspect. The resulting failure area, now much larger than the area originally planned for removal, had to be removed and replaced by MoDOT forces. The repair work was much more expensive than the savings realized during construction.

In my opinion, this VE proposal offers the same set of risks. Because the entrances were most likely constructed under permit by local contractors without adequate inspection of the subgrade or other materials used, including the concrete, we cannot reasonably predict their future performance.



Shane I. Viers, P.E.

Assistant to the Resident Engineer---Macon

# VALUE ENGINEERING CHECK SHEET

## TYPE OF WORK

(Check one that applies)

- ☐ Bridge/Structure/Footings
- ☐ Drainage Structures (RCP, RCB, CMP's, ect.)
- ☐ TCP/MOT
- ☒ Paving (PCCP, ect.)
- ☐ Grading/MSE Walls
- ☐ Signal/Lighting/ITS
- ☐ Misc. \_\_\_\_\_

## SUMMARY OF PROPOSAL

(If needed, condense summary to a couple of lines)

LEAVE COMMERCIAL DRIVEWAYS IN PLACE, INSTEAD  
OF REPLACING W/ NEW FULL DEPTH HMA.

## SCANNING OF DOCUMENT

If the proposal is large, please mark or make note, which pages need to be scanned into the database. If there are special instructions, make note of them here.